

THE SUBMILLIMETER-WAVE SPECTRUM OF ALLYL ALCOHOL ($\text{CH}_2=\text{CHCH}_2\text{OH}$)

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Two isomers of allyl alcohol have been further studied in selected regions of the submillimeter and microwave spectra. The skew-gauche and syn-gauche conformations have been previously identified at room temperature^{a, b} and in a free-jet^c, respectively. The present study positively identifies the syn-gauche conformer in the gas-phase at room temperature and confirms that tunneling, as opposed to internal rotation, of the hydroxyl proton is the predominant perturbation up to $K_a = 30$. Further measurements made in the X-band, at kHz precision, have increased the precision of the Coriolis coupling terms and energy level (tunneling) splitting. Extension of the spectral measurements has provided a set of spectral parameters that can accurately predict spectral line frequencies through much of the sub-millimeter.

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